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Science Response 2017/019

Maritimes Region

2016 STOCK STATUS UPDATE FOR SCALLOP (*PLACOPECTEN MAGELLANICUS*) IN SCALLOP FISHING AREA 29 WEST OF LONGITUDE 65°30'

Context

Advice on the Scallops in Scallop Fishing Area (SFA) 29 West of Longitude 65°30' is requested annually by Fisheries and Aquaculture Management to help determine a Total Allowable Catch (TAC) and estimate risk of different harvest scenarios in support of the fishery. The objectives of this Science Response are to:

1. Provide an update on the status of SFA 29 West of 65°30' (referred to as SFA 29 West) Scallop stocks by subarea as of the end of 2016.
2. Evaluate bycatch of lobster during the 2016 fishery. Identify all information on fishery bycatch of non-target species that may be available and, if available, identify any notable changes in occurrence of bycatch species relative to previous years.
3. Evaluate the consequences of different harvest levels by subarea during the 2017 fishery on stock abundance and exploitation rate.

The last full assessment of SFA 29 West was conducted in 2015 (DFO 2015, Sameoto et al. 2015) and updated in 2016 (DFO 2016).

This Science Response Report results from the Science Response Process of March 23, 2017, on the Stock Status Update of Scallop in Scallop Fishing Area (SFA) 29 West of 65°30'.

Background

Population surveys have been conducted annually in SFA 29 West by Fisheries and Oceans Canada (DFO) Science since 2001. The survey occurs in September/October after the fishery has closed. The current survey design uses the Scallop habitat suitability map developed by Brown et al. (2012) and bins habitat suitability probabilities into three categories defined by the following ranges: Low [0, 0.3), Medium [0.3, 0.6), and High [0.6, 1.0). Habitat suitability represents a relative probability scale of suitable Scallop habitat, with the lowest suitable Scallop habitat indicated by 0 and the highest suitable habitat indicated by 1. The population dynamics of commercial and recruit Scallops are modelled using the state-space habitat-based assessment model as defined by Smith et al. (2015). Throughout, Scallops with a shell height of 100 mm and greater (>) are referred to as commercial size. Scallops with a shell height of 90–99 mm are referred to as recruits and are expected to grow to be commercial size in the following year, and Scallops with shell height less than (<) 90 mm are considered pre-recruits.

Scallop removals accounted for in this update include all commercial landings from SFA 29 West and Food, Social, and Ceremonial (FSC) catch by scallop drag. Landed recreational and FSC catch by dip netting, diving, tongs, and hand are not available and not accounted for in the assessment.

Description of the Fishery

Scallop Fishing Area 29 encompasses a very large area inside the 12-mile territorial sea, from the south of Yarmouth (latitude 43°40'N) to Cape North in Cape Breton. This update refers to only that portion of SFA 29 West of longitude 65°30'W continuing north to Scallop Production Area 3 at latitude 43°40'N (Figure 1). This area is fished by the Full Bay (FB) Fleet and inshore East of Baccaro licence holders who are authorized to fish in SFA 29 West (hereafter referred to as the EoB Fleet). The SFA 29 West fishery has occurred since 2001. The fishery is managed using limited entry, seasonal closures, minimum shell height, and meat count. Both fleets operate under an Individual Transferable Quota (ITQ) system in this area. TACs are set and landings are reported in terms of meat weights (adductor muscles).

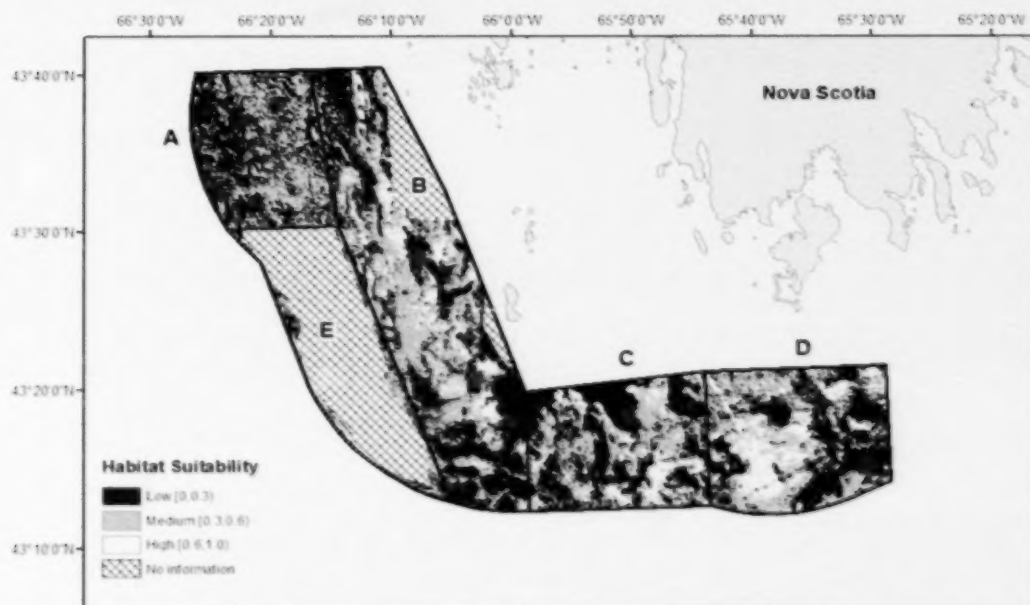


Figure 1. SFA 29 West subareas A to E. Shaded areas show habitat suitability probability categories: Low [0, 0.3] in black, Medium [0.3, 0.6] in grey, and High [0.6, 1.0] in white (see Brown et al. 2012). Note: SFA 29 extends along the shoreline to Cape North in Cape Breton.

Analysis and Response

Commercial Fishery

Since 2002, the TAC (meat weight) has been shared between the FB and EoB fleets. As of 2010, the TAC and landings are reported for both fleets combined. In 2016, a total of 72.5 tonnes of meats (t) were landed against the TAC of 75 t. There was an additional FSC catch of 2.8 t (Figure 2).

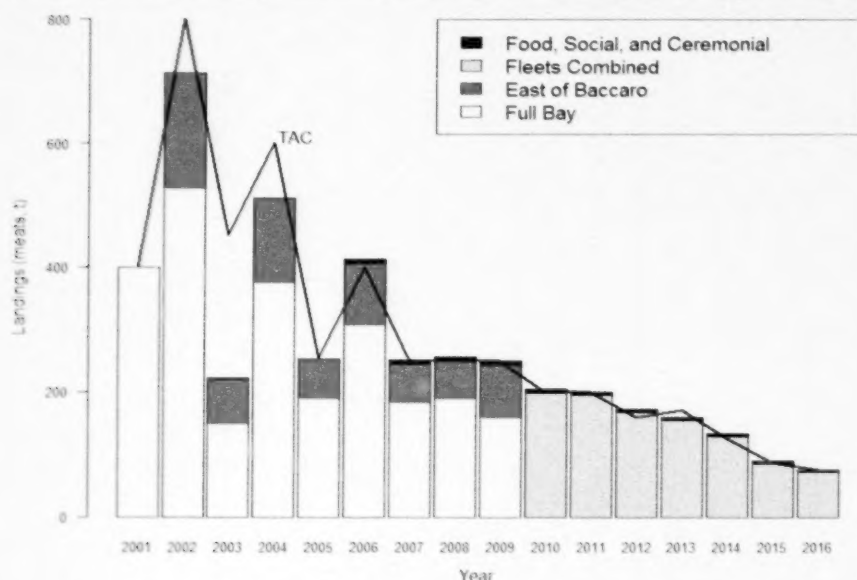


Figure 2. Annual Scallop landings (meats, t) from 2001 to 2016 for Scallop Fishing Area 29 West and the total allowable catch (TAC, black line). Note that the Food, Social, and Ceremonial landings do not count against the TAC.

The Scallop fishery in SFA 29 West in 2016 occurred in Subareas B, C, D, and E (Appendix 1). Subarea A was closed to fishing in 2016 because a biomass decline was projected for this subarea even with no fishing (DFO 2016). Lobster bycatch is monitored in this fishery, but has not resulted in any closures since 2009.

Subarea B catch rates in 2016 for the FB Fleet were similar to 2015 (28.3 kg/h in 2015 and 27.5 kg/h in 2016). The EoB Fleet fished in Subarea B in the 2016 fishing year, but there were not enough records to present these data due to *Privacy Act* considerations. Catch rates in Subarea C in 2016 increased for FB Fleet (19.3 kg/h in 2015 to 23.9 kg/h in 2016 kg/h), and did not change for the EoB Fleet (19.7 kg/h in 2015 to 19.5 kg/h in 2016). In Subarea D there were large increases in catch rates for both fleets: from 26.3 kg/h in 2015 to 67.7 kg/h for FB in 2016, and from 25.0 kg/h in 2015 to 44.3 kg/h for EoB in 2016. These were the highest catch rates in Subarea D since 2006 for both fleets.

Research Survey

In 2016 the abundance of commercial sized Scallops in SFA 29 West was patchy, with the highest densities in Subareas C and D (Figure 3). In Subarea A, the number of commercial sized Scallops decreased in both the Medium and Low habitat category (there is no High category habitat in Subarea A). In Subarea B, commercial sized Scallop abundances increased in the High and Medium habitat categories and decreased in the Low. In Subareas C and D, commercial sized Scallop abundances increased in all habitat categories. Current levels of commercial abundance in the high suitability category for Subareas C and D were the highest observed in the survey since 2008 and 2006, respectively.

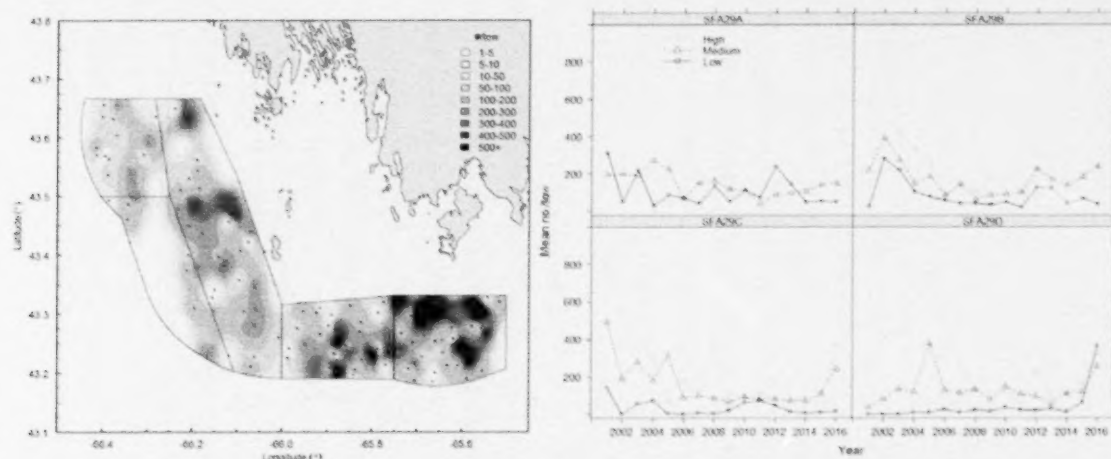


Figure 3. Commercial Scallops (≥ 100 mm shell height). On left: spatial density (numbers/tow) distribution from the 2016 survey for SFA 29 West. Points represent tow locations. On right, mean number per tow by subarea from 2001 to 2016 for Low [0, 0.3] (black circles), Medium [0.3, 0.6] (red triangle), and High [0.6, 1.0] (green crosses) categories of habitat suitability probabilities.

In 2016 the abundance of recruit sized Scallops was patchy, with the highest densities in Subareas C and D (Figure 4). In Subarea A, recruit abundances decreased in both the Medium and Low habitat category. In Subarea B recruit abundance increased in the High, did not change in the Medium, and declined in the Low habitat category. In Subareas C and D, recruit abundance increased in all habitat categories. Current recruit abundances in the High habitat category in Subarea C were the highest in the survey time series (2001 to 2016), and in Subarea D recruit abundances were the highest since 2004.

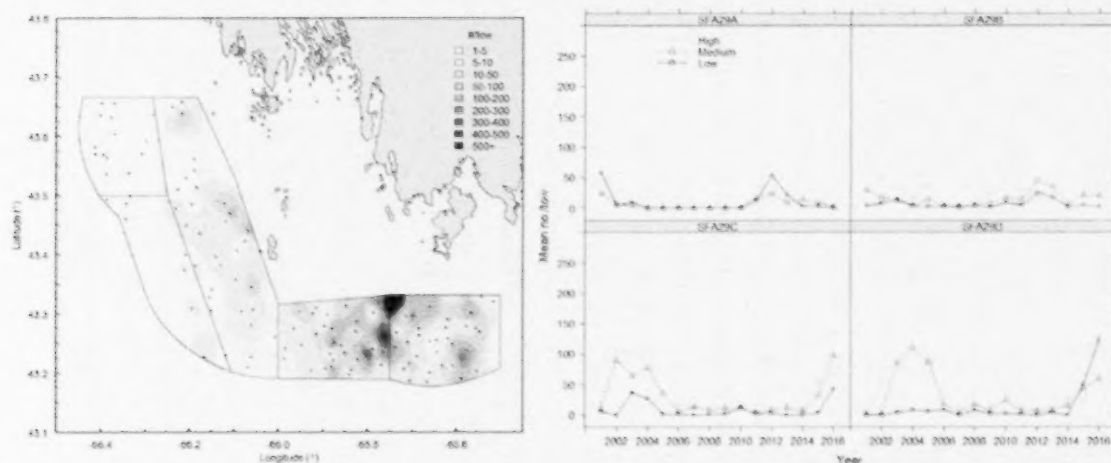


Figure 4. Recruit Scallops (90-99 mm shell height). On left: spatial density (numbers/tow) distribution from the 2016 survey for SFA 29 West. Points represent tow locations. On right, mean number per tow by subarea from 2001 to 2016 for Low [0, 0.3] (black circles), Medium [0.3, 0.6] (red triangle), and High [0.6, 1.0] (green crosses) categories of habitat suitability probabilities.

In 2016 the abundance of pre-recruit sized Scallops was patchy, with the highest densities in Subareas C and D (Figure 5). In Subarea A, pre-recruit abundances in 2016 declined from 2015 in both habitat categories. There was a decline in pre-recruit abundance in the High habitat category in Subarea B, with the other habitat categories having similar abundances to 2015. In Subarea C, there were increases in pre-recruit abundance in the High habitat category and declines in other habitats. In Subarea D, pre-recruit abundances decreased in all habitat categories.

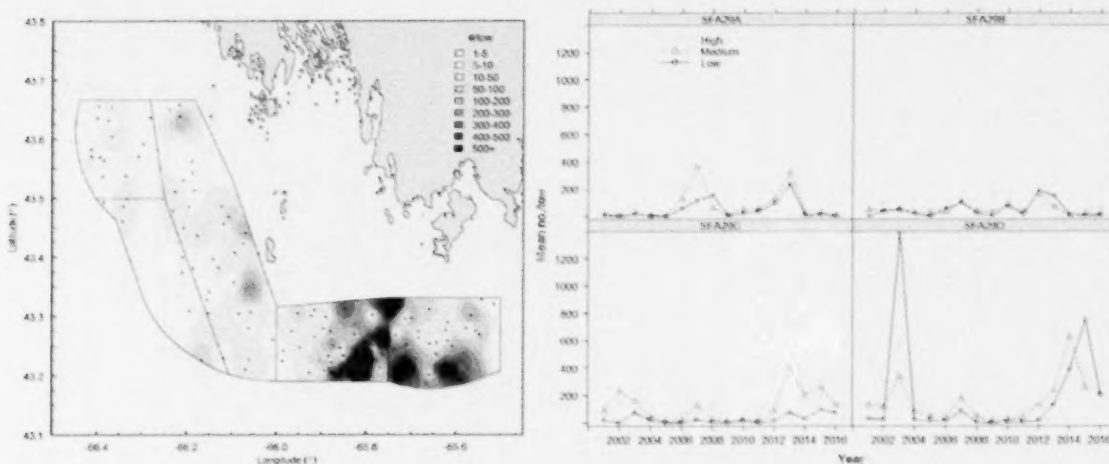


Figure 5. Pre-recruit Scallops (< 90 mm shell height). On left, spatial density (numbers/tow) distribution from the 2016 survey for SFA 29 West. Points represent tow locations. On right, mean number per tow by subarea from 2001 to 2016 for Low [0, 0.3] (black circles), Medium [0.3, 0.6] (red triangle), and High [0.6, 1.0] (green crosses) categories of habitat suitability probabilities.

Since 2012, a small number of stations (5-8 per year) have been conducted in Subarea E as part of the annual survey. Subarea E was not surveyed since between 2005-2012, as it was considered a marginal area and less of a survey priority. Since 2014, the tows have been allocated within a portion of Subarea E known to have been historically fished. Therefore, trends in survey abundance in Subarea E may not be indicative of trends in the subarea as a whole. Commercial Scallop numbers in 2016 increased from 2015, while recruitment was similar to 2015 (7.5/tow and 7.4/tow for 2015 and 2016, respectively). There was a decline in pre-recruits from 2015 onwards.

Throughout SFA 29 West, survey condition (measured in grams per cubic decimeter (g/dm^3)) ranged from $9.9 \text{ g}/\text{dm}^3$ (Subarea A) to $11.0 \text{ g}/\text{dm}^3$ (Subarea C). These values represent a small decline in condition across all subareas in 2016.

Assessment Model

The state-space habitat-based population model accepted at the framework assessment in February 2014 (Smith et al. 2015) was fit within each habitat suitability category for Subareas A to D. The model was fit to the commercial catch, effort derived from vessel monitoring system, and survey data. Subarea E is not covered by the habitat suitability map and is not modelled.

Model Exploitation

Model estimated exploitation was 0.1 or less in all subareas in 2016 (Figure 6). Subarea A has been closed to fishing since 2014. Exploitation in Subarea B increased from 2015 in the High habitat (0.01 to 0.02 in 2016) and was similar to 2015 in the Medium and Low habitat. Exploitation was unchanged from 2015 in the High habitat in Subarea C at 0.04, and declined slightly in the Medium and Low habitat. In Subarea D, exploitation increased in the High habitat (from 0.08 to 0.1 in 2016) and the Low habitat (from 0.003 to 0.02) and decreased in the Medium (from 0.07 to 0.04).

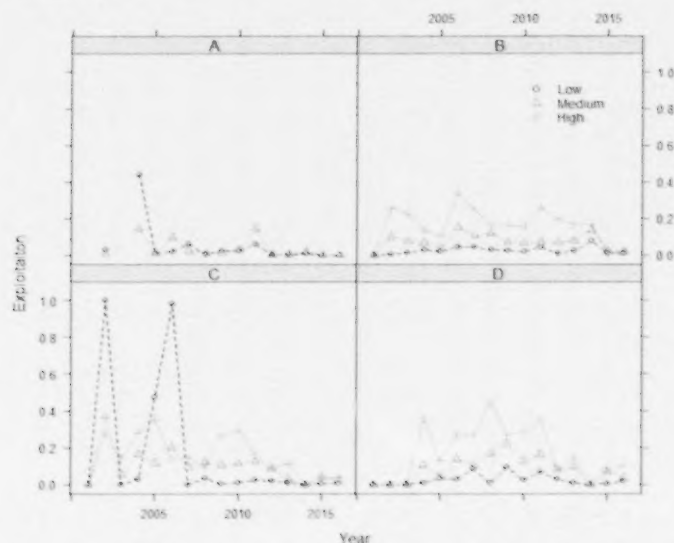


Figure 6. Model estimate of exploitation by Low [0, 0.3) category (black circles), Medium [0.3, 0.6) category (red triangles), and High [0.6, 1.0) category (green crosses) habitat suitability probabilities in SFA 29 West from 2001 to 2016.

Indicators of the Stock Status and Advice for 2017

The index associated with stock productivity for the DFO precautionary approach for SFA 29 West is commercial biomass density (t/km^2) in the High habitat suitability areas of Subareas B, C, and D (Figure 7). Lower reference points (LRPs) for Subareas B, C and D were established for the SFA 29 West fishery in the fall of 2015, and Upper Stock Reference Points (USRs) were established in the fall of 2016. More work is needed to develop reference points for Subareas A and E.

Commercial biomass density in Subarea A declined in the Low habitat category, and remained unchanged at $1.4 t/km^2$ in the Medium category. Biomass density in Subarea B decreased in the Low category and increased in the High and Medium categories. Biomass density in the High category of Subarea B in 2016 was $2.68 t/km^2$ which is above the USR of $2.24 t/km^2$. Commercial biomass density in Subareas C and D increased for all habitat categories. Biomass density in the High category of Subarea C in 2016 was $6.10 t/km^2$ which is above the USR of $2.82 t/km^2$. Biomass density in the High category of Subarea D in 2016 was $2.97 t/km^2$ which is above the USR of $2.6 t/km^2$.

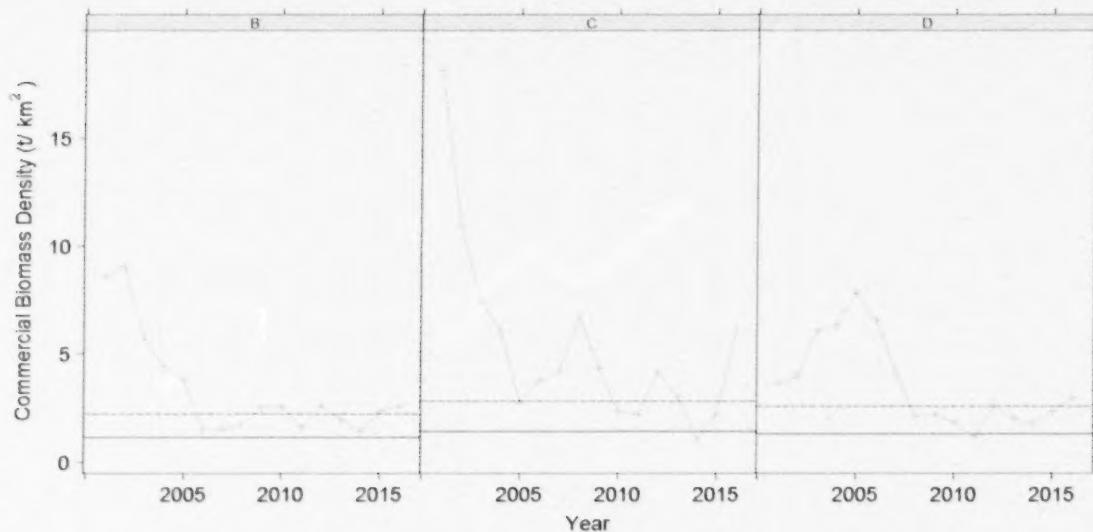


Figure 7. Commercial biomass densities (t/km^2) for the High habitat suitability category in SFA 29 West for Subareas B, C, and D, with lower reference points indicated by the solid red line and upper stock references indicated by the dashed black line.

Catch, exploitation, percent change in commercial biomass, probability of biomass decline, and the probability of exceeding the reference points were determined from the model for a range of potential catches and are presented as catch scenario tables for Subareas A–D in Tables 1–4. These catch scenarios for 2017 assume current year (2016) estimates of condition and growth, estimates of observed recruit abundance, and the mean of natural mortality estimates from the last 5 years (2012 to 2016) within each subarea. In 2016, natural mortality in the high habitat category in Subarea D (0.53) is 307% above the long term median (0.13, 2001–2015). Scallops from Subarea D were collected during the fishery and tested; however, no cause for the mortality could be determined. The elevated levels of mortality appear to be confined to the subarea, but it is unknown if it was an isolated or an on-going event. The biomass projections for 2017 use a 5 year average natural mortality. In Subarea D this projected natural mortality (0.15) was 72% lower than the natural mortality estimate for 2016. The advice given here will be overestimating biomass if natural mortality remains high in 2017. Biomass is projected to decline if mortality in 2017 is similar to 2016, even if there are no fishing removals.

Note that for Subarea A, biomass declines are predicted even if no catch is taken in 2017. This is partially due to the elevated natural mortality in the subarea (> 0.2 since 2011), and the lowest recruit biomass observed since 2010.

An example of how to interpret the catch scenarios in Tables 1–4 is presented using Table 2 for Subarea B. In this subarea, a catch of 19 t corresponds to an exploitation of 0.04 in the High habitat category and is projected to result in an 11.4% biomass increase in the High habitat category. The probability of a biomass increase is 0.58. The model predicts an increase in biomass for all of Subarea B of 7.4%; the associated probability of biomass increase is 0.6. After that catch is removed, the probability of being above the LRP is 0.91, and the probability of being above the USR is 0.63.

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Table 1. Catch scenario table for SFA 29 West Subarea A to evaluate 2017 total subarea catch levels in terms of exploitation (e), expected changes in biomass (%) and probability (Pr.) of biomass increase. Note, Subarea A has no High suitability habitat.

Catch (t)	Medium Habitat Suitability Category			Whole Subarea	
	e	Expected % Change	Pr. Increase	Expected % Change	Pr. Increase
0	0.00	-25.5	0.30	-19.7	0.32
3	0.02	-27.0	0.29	-21.7	0.30
6	0.04	-28.2	0.28	-22.3	0.29
9	0.06	-28.8	0.28	-23.5	0.28
12	0.08	-30.6	0.26	-24.5	0.27
15	0.10	-31.6	0.26	-25.9	0.26
18	0.12	-33.4	0.24	-27.9	0.25
21	0.15	-35.6	0.23	-29.6	0.24
24	0.17	-36.2	0.22	-30.6	0.22
27	0.18	-37.0	0.22	-31.5	0.21

Table 2. Catch scenario table for SFA 29 West Subarea B to evaluate 2017 total subarea catch levels in terms of exploitation (e), expected changes in biomass (%), probability (Pr.) of biomass increase, and probability of being above the lower reference point (LRP: 1.12 t/km²) and upper stock reference (USR: 2.24 t/km²).

Catch (t)	High Habitat Suitability Category					Whole Subarea	
	e	Expected % Change	Pr. Increase	Pr. > LRP	Pr. > USR	Expected % Change	Pr. Increase
0	0.00	15.6	0.60	0.91	0.65	9.8	0.62
10	0.02	14.3	0.59	0.91	0.65	8.8	0.61
19	0.04	11.4	0.58	0.91	0.63	7.4	0.60
29	0.06	9.4	0.56	0.90	0.62	6.6	0.58
38	0.08	7.0	0.55	0.90	0.61	5.0	0.57
48	0.10	4.1	0.53	0.90	0.59	4.3	0.56
57	0.12	2.6	0.52	0.89	0.58	3.4	0.55
67	0.14	0.7	0.51	0.88	0.57	2.7	0.54
77	0.16	-0.9	0.49	0.88	0.56	1.3	0.52
86	0.18	-4.4	0.47	0.87	0.54	0.3	0.50

Table 3. Catch scenario table for SFA 29 West Subarea C to evaluate 2017 total subarea catch levels in terms of exploitation (e), expected changes in biomass (%), probability (Pr.) of biomass increase, and probability of being above the lower reference point (LRP: 1.41 t/km²) and upper stock reference (USR: 2.82 t/km²).

Catch (t)	High Habitat Suitability Category					Whole Subarea	
	e	Expected % Change	Pr. Increase	Pr. > LRP	Pr. > USR	Expected % Change	Pr. Increase
0	0.00	23.6	0.60	0.94	0.83	55.6	0.88
12	0.02	21.7	0.59	0.95	0.83	53.3	0.87
24	0.05	20.3	0.59	0.94	0.83	51.6	0.86
36	0.07	18.7	0.58	0.94	0.82	50.3	0.85
48	0.09	15.7	0.57	0.94	0.81	48.1	0.85
60	0.11	15.0	0.57	0.93	0.81	47.1	0.84
71	0.14	12.1	0.55	0.93	0.80	44.8	0.83
83	0.16	10.2	0.55	0.93	0.80	43.6	0.83
95	0.18	9.2	0.54	0.93	0.79	41.8	0.82

Table 4. Catch scenario table for SFA 29 West Subarea D to evaluate 2017 total subarea catch levels in terms of exploitation (e), expected changes in biomass (%), probability (Pr.) of biomass increase, and probability of being above the lower reference point (LRP: 1.3 t/km²) and upper stock reference (USR: 2.6 t/km²).

Catch (t)	High Habitat Suitability Category					Whole Subarea	
	e	Expected % Change	Pr. Increase	Pr. > LRP	Pr. > USR	Expected % Change	Pr. Increase
0	0.00	40.8	0.73	0.95	0.73	17.4	0.71
10	0.02	38.4	0.72	0.94	0.72	16.6	0.70
20	0.04	35.5	0.71	0.94	0.71	15.3	0.69
31	0.06	33.3	0.70	0.94	0.70	14.5	0.68
41	0.08	31.8	0.69	0.93	0.69	13.5	0.67
51	0.10	28.1	0.68	0.93	0.67	12.2	0.66
61	0.12	25.3	0.66	0.93	0.66	11.0	0.65
72	0.14	23.4	0.65	0.92	0.65	10.7	0.64
82	0.16	21.3	0.64	0.92	0.64	9.3	0.62
92	0.18	17.1	0.62	0.91	0.62	7.6	0.60

In Subarea E, abundance of commercial sized Scallop in 2016 increased relative to 2015 and abundance of recruits was relatively unchanged. However, landings in 2016 (9.5 t) were the lowest since 2011; the catch rates in 2016 were lowest observed for the EoB fleet in the time series (2005-2016) and below average for the FB fleet. The lack of fishing in 29E is likely because fishers caught their allocated quota in other subareas, and is not necessarily because conditions in the area have declined. There is no evidence suggesting the population is in decline at the current level of removals.

Ecosystem Considerations

Lobster Catch in the Fishery

In 2016, there were 471 observed tows (143 EoB Fleet and 328 FB Fleet), 22 observed days (8 EoB Fleet and 14 FB Fleet) and 5 trips observed (2 EoB Fleet and 3 FB Fleet). It was estimated that 2,031 lobsters were caught during the SFA 29 West Scallop fishery in 2016 (Table 5). This corresponds to a weight of approximately 1.5 t using the average observed carapace length (96 mm) and average weight of a lobster (0.74 kg) caught in SFA 29 West in 2016. This weight is down from 2015 estimate of 3.3 t. The estimated number of lobster caught represents approximately 0.005% of the lobsters caught in the 2015/2016 Lobster Fishing Area (LFA) 34 lobster fishery and approximately 0.03% of the lobsters caught in the SFA 29 West portion of LFA 34. In 2016, there was no fishing activity in Subarea A and no observed trips in Subareas B or D so there are no lobster estimates for those areas. Subarea E had the highest lobster bycatch estimate at 1,481 lobsters, followed by Subarea C at 547 lobsters.

Trends in lobster catches by the lobster fishery in the SFA 29 West area as a whole are not indicative of an area that has been adversely affected by the Scallop fishery since 2001.

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Table 5. Estimated total numbers of lobsters caught in the Scallop fishery (Full Bay and East of Baccaro combined) for 2014–2016 based upon observer data. DI (%) refers to the percentage of dead or injured lobsters. (Dash (-) indicates no observer coverage).

Year	Area	Observer data			Fishery Meats (t)	Estimated	
		No. lobsters	DI (%)	Meats (t)		No. lobsters	DI
2014	A	-	-	-	3.0	-	-
	B	628	24	7.1	103.4	8,008	1,959
	C	-	-	-	0	-	-
	D	-	-	-	0	-	-
	E	57	32	1.2	27.3	1,296	415
	Total	685	-	8.3	133.7	9,304	2,374
2015	A	-	-	-	0	-	-
	B	118	*	2.7	15.6	682	*
	C	33	*	0.5	14.6	938	*
	D	87	*	1.3	32.7	2,181	*
	E	32	*	1.4	27.7	631	*
	Total	270	-	5.9	90.6	4,431	*
2016	A	-	-	-	0	-	-
	B	-	-	-	16.6	-	-
	C	212	17	6.0	15.5	547	96
	D	-	-	-	33.7	-	-
	E	162	22	1.0	9.5	1,481	329
	Total	374	-	8.0	75.3	2,031	425

* no damage estimates provided for the 2015 fishery due to incomplete sampling during observer trips.

Other Catch in the Fishery

The discard rates of all species in the 2016 Scallop fishery are presented in Table 6. Most species are within ranges of discards observed in previous years. Some species had discard rates higher than has been previously observed: barnacles, Hermit Crab, Lemonweed, monkfish, sea raven, Sea Scallops, and whelks.

Table 6. Inshore Scallop discard rates for bycatch species in SFA 29 West for 2016. Discard rates are the weight of discards (kg) observed divided by the weight of Scallops (kg, meats) landed during the observed trips. Only species that were caught in 2016 are shown. For previous years' data, see Sameoto et al. (2015).

Species	Rate	Species	Rate	Species	Rate
American Lobster	0.103	Lemonweed	0.434	Starfish	0.229
Atlantic Rock Crab	0.300	Little Winter Skate	0.064	Striped Atlantic Wolffish	0.003
Barnacles	0.439	Longhorn Sculpin	0.009	Thorny Skate	<0.001
Brittle Star	0.003	Monkfish	0.044	Toad Crab	0.001
Clams	0.135	Ocean Pout	0.001	Whelks	0.168
Common Mussels	0.130	Sand Dollars, Sea Urchins	0.002	Winter Flounder	0.004
Hermit Crabs	0.141	Sea Raven	0.086	Yellowtail Flounder	0.001
Iceland Scallop	0.003	Sea Scallop	4.350		
Jonah Crab	0.062	Sponges	0.211		

Conclusions

In 2016, commercial biomass densities in Subareas B, C, and D were in the Healthy zone. Indications for Subarea E are that the population is neither increasing nor decreasing significantly at the current level of removals. For Subarea A, biomass declines are predicted even if no catch is taken in 2017.

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Sources of Information

- Brown, C., J.A. Sameoto, and S.J. Smith. 2012. Multiple Methods, Maps, and Management Applications: Purpose Made Seafloor Maps in Support of Ocean Management. *J. Sea Res.* 72: 1–13.
- DFO. 2015. Assessment of Scallops (*Placopecten magellanicus*) in Scallop Fishing Area (SFA) 29 West of Longitude 65°30'W. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2015/035.
- DFO. 2016. 2015 Stock Status Update for Scallop (*Placopecten magellanicus*) in Scallop Fishing Area 29 West of Longitude of 65°30'. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/028.
- Sameoto, J.A., S.J. Smith, L.E. Nasmith, A. Glass, and C. Denton. 2015. Scallop Fishing Area 29: Stock Status and Update for 2015. DFO Can. Sci. Advis. Sec. Res. Doc. 2015/067.
- Smith, S.J., L. Nasmith, A. Glass, B. Hubley, and J. Sameoto. 2015. Framework Assessment for SFA 29 West Scallop Fishery. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/110.

Appendix

Appendix 1. Commercial scallop fishery landings, total allowable catch (TAC), and landings for Food, Social and Ceremonial purposes (FSC) by First Nations (meats, t) for Scallop Fishing Area (SFA) 29 West from 2010 to 2016. TAC for Subareas A and E are combined. Dash (-) indicates no catch. * indicates preliminary data.

Year	Subarea	TAC (t)	Landings (t)	FSC (t)	Total Landings (t)
2010	A		9.4	-	9.4
	E	25.0	5.4	-	5.4
	B	65.0	50.7	1.4	52.1
	C	45.0	60.6	-	60.6
	D	65.0	72.1	4.5	76.6
	Total	200.0	198.2	5.9	204.0
2011	A		18.1	-	18.1
	E	25.0	5.6	-	5.6
	B	65.0	59.3	-	59.3
	C	45.0	45.5	-	45.5
	D	65.0	65.7	5.4	71.1
	Total	200.0	194.1	5.4	199.5
2012	A	25.0	1.0	-	1.0
	E		18.0	-	18.0
	B	60.0	76.8	4.2	81.0
	C	45.0	39.8	0.03	39.8
	D	30.0	31.7	0.4	32.2
	Total	160.0	167.3	4.7	172.0
2013	A		0.9	-	0.9
	E	35.0	13.5	-	13.5
	B	75.0	82.6	4.9	87.5
	C	25.0	18.3	-	18.3
	D	35.0	38.8	-	38.8
	Total	170.0	154.1	4.9	159.0
2014	A		3.0	-	3.0
	E	45.0	27.3	-	27.3
	B	90.0	98.1	5.3	103.4
	C	0.0	-	-	-
	D	0.0	-	-	-
	Total	135.0	128.4	5.3	133.7
2015	A	0	-	-	-
	E	27.0	27.3	0.4	27.7
	B	15.0	14.9	0.7	15.6
	C	15.0	13.2	1.4	14.6
	D	30.0	29.0	3.7	32.7
	Total	87.0	84.4	6.2	90.6
2016*	A	0.0	-	-	-
	E	25.0	9.5	-	9.5
	B	15.0	16.6	-	16.6
	C	15.0	14.9	0.6	15.5
	D	20.0	31.5	2.2	33.7
	Total	75.0	72.5	2.8	75.3

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